ENVIRONMENTAL ASSESSMENT FOR 23 BLM ALLOTMENTS
LOCATED IN THE UPPER RIO GRANDE WATERSHED
EA#NM-220-08-042

PURPOSE AND NEED

One of the major uses of public lands administered by the Bureau of Land Management (BLM) has traditionally been the grazing of cattle, sheep or horses for the benefit of individuals and communities throughout the western United States. This use is regulated by public land legislation, including the Taylor Grazing Act, the Endangered Species Act, the Federal Land Policy and Management Act, and the Public Rangelands Improvement Act. This document provides information needed to determine whether BLM should renew permits/leases for cattle grazing on 23 allotments within the Upper Rio Grande watershed for an additional 10 years. The 23 allotments are being analyzed in one document in order to address the cumulative effects of livestock on the BLM parcels within the Upper Rio Grande watershed and to reduce the volume of paper involved in the public notification process. The allotments addressed in this Environmental Assessment include: # 503 Embudo Allotment, #514 Cerro Azul, #517 Hondo, # 521 Cuestecita Allotment, #522 Sebastian Martin GRT, # 576 Trailing Stop-Over, #581 South San Antone, #588 Alire, # 590 Espinosa, #592 Brownie Peaks, #599 De La Cruz, #606 Wild River, #608 Guadalupe Allotment, #617 Highway, #618 Sixty Four, #619 Cerrito Dormilon, #620 Poquito, #624 Carson Road, #626 Carson, #641 Common Use Area, #767 Hospital, # 929 North Lease and # 942 Petaca.

PROPOSED ACTION AND ALTERNATIVES

Proposed Action: No Action Alternative

Re-issue a term grazing permit or lease without any changes as outlined in Table 1. For additional information, refer to Allotment Evaluation documents available for each allotment at the Taos BLM Field Office.

Alternative 1, No Grazing:

Do not issue grazing permits or lease for these allotments, thereby suspending livestock grazing.

Table 1. Outline of allotment guidelines for permit / lease renewal

Allotment Number	Livestock Type	Livestock Number	Season of Use	Total Federal Acres	Pastures	Grazing System	Proposed Improvements	Monitoring
503	Cattle	100	2/08 - 2/28	168	1	Dormant Season	Possible vegetation manipulation by fire or mechanical means **	BLM would continue the rangeland monitoring study program, continue to consult with the grazing permittee on placement of mineral and supplemental feed and continue monitoring for new populations of noxious weeds.
514	Cattle	215	10/15 - 10/31	270	1	Dormant Season	Possible vegetation manipulation by fire or mechanical means **	
517	Cattle	10	6/15 - 12/01	1,860	3	Deferred Rotation	Possible vegetation manipulation by fire or mechanical means **	
521	Cattle	11	6/15 - 9/30	1,629	2	Rotational	Possible vegetation manipulation by fire or mechanical means **	
522	Cattle	74	3/01 - 2/28	22,738	3	Rotational	Possible vegetation manipulation by fire or mechanical means **	

576	Cattle	350 600	6/21 - 6/22 10/01 - 10/02	480	1	Trailing	None	
581	Cattle	125	7/01 - 8/03	3,193	3	Rotational	2 miles of lay-down fence **	
588	Cattle	258	5/01 - 6/15	4,504	2	Rotational	None	
590	Cattle	350 240	5/01 - 6/20 10/03 - 11/27	5,422	1	Unknown	None	
592	Cattle Yearling	230 171	5/01 - 6/15 5/01 - 6/02	5,010	2	Rotational	None	
599	Cattle	90	5/01 - 6/30	280	1	Unknown	None	
606	Cattle	50 50 50 47 30 30 30	6/30 - 8/20 8/21 - 10/02 8/21 - 10/11 10/3 - 11/01 6/30 - 8/20 6/30 - 10/02 10/3 - 11/01	4,724	4	Rotational	Possible vegetation manipulation by fire or mechanical means **	
608	Cattle	70	5/01 - 7/30	2,758	2	Rotational	Possible vegetation manipulation by fire or mechanical means **	
617	Cattle	116 27	5/16 - 7/01 10/16 - 1031	640	1	Unknown	None	
618	Cattle	70	6/07 - 7/14	1,760	1	Unknown	Possible vegetation manipulation by fire or mechanical means and two dirt tanks**	
619	Cattle	132	5/11 - 6/09	2,400	1	Unknown	Possible vegetation manipulation by fire or mechanical means and two dirt tanks**	
620	Cattle	70	7/15 - 7/30	1,284	1	Rotational	Possible vegetation manipulation by fire or mechanical means and two dirt tanks**	
624	Cattle	5	6/15 - 10/10	320	1	Unknown	Possible vegetation manipulation by fire or mechanical means **	
626	Cattle	60	5/01 - 10/10	1,380	1	Unknown	Possible vegetation manipulation by	

							fire or mechanical means **	
641	Cattle	50 30 68 68	5/01 - 6/29 5/01 - 6/29 5/01 - 7/01 9/01 - 10/20	5,602	1	Unknown	Possible vegetation manipulation by fire or mechanical means **	
767	Cattle	132	4/14 - 4/19	477	1	Unknown	None	
929	Cattle	10	5/16 - 7/01	1,210	1	Unknown	Possible vegetation manipulation by fire or mechanical means **	
942	Cattle	132 132	4/20 - 5/10 10/20 - 10/31	1,560	2	Unknown	Possible vegetation manipulation by fire or mechanical means **	
** These will be addressed in a later NEPA documents if and when funding is available.								

Location and Maps

503 - Located approximately 3 miles north, northeast of Velarde, in Rio Arriba County, New Mexico. Elevations run from 6,850 to 6,950 feet. The allotment is located on the USGS Velarde Quadrangle 7.5 minute series topographic map. T. 23 N., R. 09 E. Sec 26, 27, 34 and 35.

514 - Located approximately 5 miles southwest of Pilar, in Taos County, New Mexico. Elevations run from 6,850 to 6,950 feet. The allotment is located on the USGS Carson and Trampas Quadrangle 7.5 minute series topographic maps. T. 23 N., R. 10 E. Sec 1, 2 and 11.

517 - Located approximately 2 miles northeast of Pilar, in Taos County, New Mexico. Elevations run from 6,800 to 7,000 feet. The allotment is located on the USGS Carson and Taos SW Quadrangle 7.5 minute series topographic maps. T. 24 N., R. 11 E. Sec 14, 15, 22, 23, 27 and 28.

521 - Located approximately 8 miles east, southeast of Dixon, in Rio Arriba and Taos Counties, New Mexico. Elevation on this allotment is roughly 6,000 feet. The allotment is located on the USGS Trampas Quadrangle 7.5 minute series topographic map. T. 23 N., R. 10 E. Sec 5 and 6.

522 - Located just east and south of Velarde, in Rio Arriba County, New Mexico. Elevation on this allotment is roughly 5,800 to 7,400 feet. The allotment is located on the USGS Chimayo, Lyden, San Juan Pueblo and Velarde Quadrangle 7.5 minute series topographic maps. T. 22 N., R. 09 E. and R. 10 E.

576 - Located approximately 17 miles northwest of Questa, in Taos County, New Mexico. Elevation on this allotment is roughly between 7,400 and 7,650 feet. The allotment is located on the USGS Pinabetoso Peaks 7.5 minute series topographic map. T. 31 N., R. 09 E. Sec 23.

588 - Located approximately 14 miles west, northwest of Tres Piedras, in Rio Arriba County, New Mexico. Elevation on this allotment is roughly 8,350 to 8,500 feet. The allotment is located on the USGS Cerro de la Olla and La Segita Peaks Quadrangle 7.5 minute series topographic maps.
T. 30 N., R. 10 E. Sec 2-5, 7, 8, 17-20 and 30.

590 - Located approximately 17 miles northwest of Questa, in Taos County, New Mexico. Elevation on this allotment is roughly between 7,400 and 7,650 feet. The allotment is located on the USGS La Segita Peaks NE

and Ute Mountain 7.5 minute series topographic maps. T. 31 N., R. 11 E. Sec 1-11, 14-17 and 23.

592 - Located approximately 13 miles west of Costilla, in Taos County, New Mexico. Elevation on this allotment is roughly 7,500 to 8,300 feet. The allotment is located on the USGS La Segita Peaks NE and Ute Mountain Quadrangle 7.5 minute series topographic maps. T. 31 N., R. 11 E. Sec 6 and T. 32 N., R. 11 E. Sec 19-31.

599 - Located approximately 12 miles north, northwest of Tres Piedras, in Rio Arriba County, New Mexico. Elevation on this allotment is roughly 8,800 to 9,300 feet. The allotment is located on the USGS San Antonio Mountain Quadrangle 7.5 minute series topographic map. T. 30 N., R. 08 E. Sec 15, 22, 23, 26 and 27.

606 - Located approximately 5 miles west of Questa, in Taos County, New Mexico. Elevation on this allotment is roughly 7,500 to 8,100 feet. The allotment is located on the USGS Guadalupe Mountain and Sunshine Quadrangle 7.5 minute series topographic maps. T. 28 N., R. 12 E. Sec 3-6, 8, 9, 16 and 17, T. 29 N., R. 12 E. Sec 5, 6 and 31-33 and T. 30 N., R. 12 E. Sec 29-32. This allotment has two parcels.

608 - Located approximately 4 miles northwest of Questa, in Taos County, New Mexico. Elevation on this allotment is roughly 7,400 to 8,700 feet. The allotment is located on the USGS Guadalupe Mountain, Sunshine and Questa Quadrangle 7.5 minute series topographic maps. T. 29 N., R. 12 E. Sec 4, 5, 9, 10, 15, 21-24, 26-27.

617 - Located approximately 6 miles southeast of Tres Piedras, in Taos County, New Mexico. Elevation on this allotment is roughly 7,600 to 7,700 feet. The allotment is located on the USGS Cerro de los Taoses and Petaca Peak Quadrangle 7.5 minute series topographic maps. T. 27 N., R. 10 E. Sec 3 and 4.

618 - Located approximately 10 miles southeast of Tres Piedras, in Taos County, New Mexico. Elevation on this allotment is roughly 7,300 to 7,500 feet. The allotment is located on the USGS Cerro de los Taoses Quadrangle 7.5 minute series topographic map. T. 27 N., R. 10 E. Sec 14 and T. 27 N., R. 11 E. Sec 17, 18 and 20. This allotment has two parcels.

619 - Located approximately 10 miles southeast of Tres Piedras, in Taos County, New Mexico. Elevation on this allotment is roughly 7,400 to 7,600 feet. The allotment is located on the USGS Cerro de los Taoses and Petaca Peak Quadrangle 7.5 minute series topographic maps. T. 27 N., R. 10E. Sec 22-27.

620 - Located approximately 11 miles southeast of Tres Piedras, in Taos County, New Mexico. Elevation on this allotment is roughly 7,400 to 7,800 feet. The allotment is located on the USGS Cerro de los Taoses Quadrangle 7.5 minute series topographic map. T. 27 N., R. 11 E. Sec 19 and 29. This allotment has two parcels.

624 - Located approximately 8 miles west of Taos, in Taos County, New Mexico. Elevation on this allotment is roughly 7,000 to 7,100 feet. The allotment is located on the USGS Los Cordovas and Tres Orejas Quadrangle 7.5 minute series topographic maps. T. 25 N., R. 11 E. Sec 10 and 11.

626 - Located approximately 10 miles southeast of Tres Piedras, in Taos County, New Mexico. Elevation on this allotment is roughly 7,300 to 7,500 feet. The allotment is located on the USGS Carson, Los Cordovas and Taos SW Quadrangle 7.5 minute series topographic maps. T. 24 N., R. 11 E. Sec 2, 10 and 11 and T. 25 N., R. 11 E. Sec 23-26 and 35.

641 - Located approximately 7 miles northwest of Questa, in Taos County, New Mexico. Elevation on this allotment is roughly 7,500 to 9,200 feet. The allotment is located on the USGS Cerro de la Olla, Guadalupe Mountain, Sunshine and Tres Piedras NE Quadrangle 7.5 minute series topographic maps. T. 29 N., R. 11 E. Sec 1, 2 and 11-14 and T. 29 N., R. 12 E. Sec 6-9, 17 and 18.

767 - Located approximately 8 miles southeast of Tres Piedras, in Taos County, New Mexico. Elevation on this allotment is roughly 7,300 to 7,700 feet. The allotment is located on the USGS Petaca Peak Quadrangle 7.5 minute series topographic map. T. 27 N., R. 10 E. Sec 19, 20 and 30. This allotment has two parcels.

929 - Located approximately 2 miles northeast of Tres Piedras, in Taos County, New Mexico. Elevation on this allotment is roughly 7,950 to 8,050 feet. The allotment is located on the USGS Cerro de los Taoses, Petaca Peak, Tres Piedras and Tres Piedras NE Quadrangle 7.5 minute series topographic maps. T. 28 N., R. 09 E. Sec 11-14 and T. 28 N., R. 10 E. Sec 7, 21, 22, 27, 28 and 33. This allotment has three parcels.

942 - Located approximately 10 and 13 miles southeast of Tres Piedras, in Taos County, New Mexico. Elevation on this allotment is roughly 7,300 to 7,700 feet. The allotment is located on the USGS Cerro de los Taoses, Petaca Peak and Tres Orejas Quadrangle 7.5 minute series topographic maps. T. 26 N., R. 10 E. Sec 13 and 24 and T. 27 N., R. 10 E. Sec 20 and 28-30. This allotment has two parcels.

See Figure 1 for the map. Individual allotment maps are available at the Taos Field Office and upon request.

AFFECTED ENVIRONMENT / ENVIRONMENTAL IMPACTS

Areas of Critical Environmental Concern / Special Management Areas

Five allotments (581, 588, 599, 639 and 641) either are included, portions of the allotment are included or portions are adjacent to the San Antonio Special Management Area (SMA). Portions of two allotments (581 and 599) are within the Winter Range ACEC. Portions of three allotments (606, 608 and 641) are within the Wild River Recreation Area. Portions of two allotments (503 and 514) are within the Lower Gorge ACEC. One allotment (521) is within the Copper Hill ACEC. One allotment (522) is adjacent to the Fun Valley SMA. In accordance with the management prescriptions for these areas no increase in grazing preference is proposed in **either alternative**, thus there would be no effect from **either alternative**.

Wilderness / Wilderness Study Areas

There are no wilderness or wilderness study areas within the subject allotments, thus there would be no effect from **either action**.

Air Quality

The Clean Air Act Amendments in 1990 required that all federal actions conform with State Implementation Plans for air quality. One non-attainment area has been designated in New Mexico. None of these areas are located on or near the allotment.

Although this allotment is not within a non-attainment area, greenhouse gas emissions from non-renewable sources often occur from ranching operations. Greenhouse gases (GHG), including carbon dioxide (CO_2) and methane (CH_4), and the potential effects of GHG emissions on climate, are not regulated by the EPA under the Clean Air Act. However, greenhouse gas emissions are linked to climate change.

Under the **proposed action**, GHG emissions are expected to be generated primarily from vehicles used to manage cattle operations and may be estimated to be about 10 tons of relevant emission. The BLM recommends using best management practices to reduce these emissions, such as reducing number of trips, keeping vehicle well maintained, purchasing more fuel efficient vehicles. There would be no effect under the **no grazing alternative**.

Climate

Global mean surface temperatures have increased nearly 1.0°C (1.8°F) from 1890 to 2006 (Goddard Institute for Space Studies, 2007). However, observations and predictive models indicate that average temperature changes are likely to be greater in the Northern Hemisphere. Without additional meteorological monitoring systems, it is difficult to determine the spatial and temporal variability and change of climatic conditions, but increasing concentrations of GHGs are likely to accelerate the rate of climate change.

In 2001, the Intergovernmental Panel on Climate Change (IPCC) predicted that by the year 2100, global average surface temperatures would increase 1.4 to 5.8°C (2.5 to 10.4°F) above 1990 levels. The National Academy of Sciences (2006) supports these predictions, but has acknowledged that there are uncertainties regarding how climate change may affect different regions. Computer model predictions indicate that increases in temperature will not be equally distributed, but are likely to be accentuated at higher latitudes. Warming during the winter months is expected to be greater than during the summer, and increases in daily minimum temperatures is more likely than increases in daily maximum temperatures. It is not, however, possible to predict with any certainty regional or site specific effects on climate relative to the proposed lease parcels and subsequent actions.

However, potential impacts to natural resources and plant and animal species due to climate change are likely to be varied, including those in the southwestern United States. For example, if global climate change results in a warmer and drier climate, increased particulate matter impacts could occur due to increased windblown dust from drier and less stable soils. Cool season plant species' spatial ranges are predicted to move north and to higher elevations, and extinction of endemic threatened/endangered plants may be accelerated. Due to loss of habitat or competition from other species whose ranges may shift northward, the population of some animal species may be reduced or increased. Less snow at lower elevations would likely impact the timing and quantity of snowmelt, which, in turn, could impact water resources and species dependant on historic water conditions. Forests at higher elevations in New Mexico, for example, have been exposed to warmer and drier conditions over a ten year period. Should the trend continue the habitats and identified drought sensitive species in these forested areas and higher elevations may also be more affected by climate change.

In New Mexico, a recent study indicated that the mean annual temperatures have exceeded the global averages by nearly 50% since the 1970's (Enquist and Gori). Similar to trends in national data, increases in mean winter temperatures in the southwest have contributed to this rise. When compared to baseline information, periods between 1991 and 2005 show temperature increases in over 95% of the geographical area of New Mexico. Warming is greatest in the northwestern, central, and southwestern parts of the state.

We anticipate that monitoring efforts will help indicate vegetation shifts, allowing for management modifications to address global climate change.

Soils

The following soils are identified as occurring on the allotments analyzed in the watershed:

Apache stony fine sandy loam, 1 to 15 percent slopes. These soils consist of stony sandy loams with rooting depths between 10 and 20 inches. Parent material of weathered basalt and other volcanic debris comprise these soils. Average annual precipitation in this complex ranges from 12 to 15 inches. Vegetation is characterized by pinyon, juniper, sideoats grama, blue grama, needle and thread and fourwing saltbush.

Antonito-Travelers association, gently sloping. These soils consist of stony loams, with rooting depths between 20 and 40 inches. Parent material of weathered basalt and eolian materials comprise this soil. Average annual precipitation in this area ranges from 10 to 12 inches. Vegetation is characterized by western wheat, blue grama, needle and thread, fringe sage, black sagebrush, Indian ricegrass and winter fat.

Chimayo-Rock outcrop complex, very steep. These soils consist of cobbly sandy loam and granite escarpments, with rooting depths up to 20 inches. Parent material of colluvium and residuum of granite comprise this soil. Average annual precipitation in this area ranges from 19 to 21 inches. Vegetation is characterized by pinyon, juniper, blue grama, needle and thread, Indian ricegrass, sideoats grama, alkali sacaton and little bluestem.

Chita loam, 0 to 5 percent slopes. These soils consist of loams, with rooting depths over 60 inches. Parent material of alluvium and eolian sediments derived from sandstone and igneous rocks comprise these soils. Average annual precipitation in this area ranges from 12 to 14 inches. Vegetation is characterized by western wheat, blue grama, Indian ricegrass, galleta, fourwing saltbush and sagebrush.

Fernando cobbly loam, 1 to 7 percent. The soil consists of loams, with rooting depths over 60 inches. Parent materials of mixed alluvium comprise this soil. Average annual precipitation ranges between 10 and 14 inches. Vegetation is characterized by western wheat, galleta, blue grama, squirreltail and sagebrush.

Fernando-Hernandez association, nearly level. The soil consists of loam and clay loams, with rooting depths over 60 inches. Parent materials of alluvium derived from mixed sources comprise this soil. Average annual precipitation ranges between 10 and 14 inches. Vegetation is characterized by western wheat, galleta, blue grama, winter fat, fourwing saltbush and sagebrush.

Hernandez-Petaca association, gently sloping. The soil consists of loams, with rooting depths over 60 inches. Parent materials of alluvium derived from mixed sources comprise this soil. Average annual precipitation ranges between 10 and 14 inches. Vegetation is characterized by western wheat, needle and thread, galleta, blue grama and sagebrush.

Hernandez-Silva association, gently sloping. The soil consists of loams, with rooting depths over 60 inches. Parent materials of alluvium and eolian materials comprise this soil. Average annual precipitation ranges between 10 and 14 inches. Vegetation is characterized by western wheat, needle and thread, galleta, blue grama and sagebrush.

Luhon-Travelers complex, 3 to 7 percent slopes. These soils consist of loams, with rooting depths between 20 to 60 inches. Parent material of residuum of basalt and eolian sediments comprise these soils. Average annual precipitation in this area ranges from 10 to 12 inches. Vegetation is characterized by western wheat, Indian ricegrass, and winter fat.

Manzano clay loam, 0 to 5 percent slopes. This soil consists of clays loams, with rooting depths over 60 inches. Parent material of mixed alluvium comprises this soil. Average annual precipitation in this area ranges from 12 to 14 inches. Vegetation is characterized by western wheat, blue grama, galleta, sideoats grama and sagebrush.

Montecito loam, 1 to 15 percent slopes. The soil consists of loams, with rooting depths over 60 inches. Parent materials derived from alluvium basalt comprise this soil. Average annual precipitation ranges between 10 and 14 inches. Vegetation is characterized by pinyon, juniper, blue grama, sideoats grama, snakeweed and sagebrush.

Montecito-Rock outcrop complex, moderately steep. The soil consists of loams, with rooting depths over 60 inches. Parent materials of weathered basalt and eolian materials comprise this soil and the rock outcrops consist of folded, broken and exposed basalt flows. Average annual precipitation ranges between 13 and 15 inches. Vegetation is characterized by pinyon, juniper, sideoats grama, galleta, western wheat, and blue grama.

Orejas stony loam, 15 to 40 percent slope. The soil consists of stony loams, with rooting depths up to 20 inches. Parent materials of residuum of basalt comprise this soil. Average annual precipitation ranges between 13 and 15 inches. Vegetation is characterized by pinyon, juniper, sideoats grama, sagebrush and blue grama.

Orejas-Montecito association, strongly sloping. The soil consists of loams, with rooting depths between 20 and over 60 inches. Parent materials of weathered basalt and eolian materials comprise this soil. Average annual precipitation ranges between 13 and 15 inches. Vegetation is characterized by pinyon, juniper, sideoats grama, sagebrush muttongrass and blue grama.

Orthents-Badland association, very steep. This soil consists of gravelly clay loams, with rooting depths over 60 inches. Parent material of mixed alluvium derived from the Santa Fe Formation comprises this soil. Average annual precipitation in this area ranges from 13 to 15 inches. Vegetation is characterized by pinyon, juniper, blue grama, and sideoats grama.

Orthents-Calciorthids association, very steep. This soil consists of gravelly clay loams, with rooting depths over 60 inches. Parent material of mixed alluvium comprises this soil. Average annual precipitation in this area ranges from 13 to 15 inches. Vegetation is characterized by pinyon, juniper, blue grama, and sideoats grama.

Orthents-Calciorthids association, very steep. These soils consist of gravelly or cobbly loams, with rooting depths over 60 inches. Parent material of mixed alluvium comprises these soils. Average annual precipitation in this complex ranges from 15 to 17 inches. Vegetation is characterized by pinyon, juniper, blue grama and sideoats grama.

Orthents-Rock outcrop association, very steep. This soil consists of gravelly clay loams, with rooting depths over 60 inches. Parent material of mixed alluvium derived from the Santa Fe Formation comprises this soil. Outcroppings are basalt escarpments. Average annual precipitation in this area ranges from 13 to 15 inches. Vegetation is characterized by pinyon, juniper, blue grama, and sideoats grama.

Petaca-Prieta complex, 1 to 8 percent slopes. These soils consist of clay loams, with rooting depths between 10 to 20 inches. Parent materials of weathered basalt and eolian sediments comprise these soils. Average annual precipitation ranges between 10 and 14 inches. Vegetation is characterized by western wheat, blue grama, sideoats grama, and winterfat.

Petaca-Silva association, gently sloping. The soil consists of loams, with rooting depths between 20 to over 60 inches. Parent materials of weathered basalt and eolian materials comprise this soil. Average annual precipitation ranges between 10 and 14 inches. Vegetation is characterized by western wheat, blue grama and sagebrush.

Raton very stony silt loam, 3 to 8 percent slope. This soil consists of stony loams, with rooting depths up to 20 inches. Parent material of residuum from basalt on the top of old volcanic cones comprises this soil. Average annual precipitation in this area ranges from 14 to 16 inches. Vegetation is characterized by Arizona fescue, sideoats grama, mountain muhly, and oak.

Raton-Stunner association, moderately steep. These soils consist of stony/cobbly loams, with rooting depths between 20 to over 60 inches. Parent material of gravelly and cobbly material weathered from basalt and eolian sediment comprises this soil. Average annual precipitation in this area ranges from 14 to 16inches. Vegetation is characterized by squirreltail, western wheat, blue grama, sagebrush and winter fat.

Rock outcrop-Raton complex, moderately steep. These soils consist of stony silt loams, with rooting depths up to 20 inches. Parent material of basalt residuum and mixed eolian sediment comprise these soils. Average annual precipitation in this complex ranges from 14 to 16 inches. Vegetation is characterized by pinyon, juniper, muttongrass, Arizona fescue and western wheat.

Rock outcrop-Ustorthents complex, very steep. This soil is gravelly loam with rooting depths over 60 inches. Parent materials of igneous and metamorphic rock comprise this soil. Average annual precipitation is around 20 inches. Vegetation is characterized by Douglas-fir, ponderosa pine, mountain brome, kinnikinnick and oak.

Rosyosa-Orthents association, moderately steep. This soil consists of sandy loams, with rooting depths over 60 inches. Parent material of mixed alluvium derived from the Santa Fe Formation and eolian materials comprise this soil. Average annual precipitation in this area ranges from 12 to 14 inches. Vegetation is characterized by pinyon, juniper, blue grama, and Indian ricegrass.

Sedillo-Silva association, strongly sloping. These soils consist of loams, with rooting depths over 60 inches. Parent material formed from mixed alluvium and eolian material comprises this soil. Average annual precipitation in this area ranges from 10 to 12 inches. Vegetation is characterized by western wheat, blue grama, and rabbitbrush.

Servilleta-Prieta complex, 1 to 5 percent slopes. These soils consist of clay loams, with rooting depths between 10 to 40 inches. Parent materials of mixed material derived from weathered basalt and eolian comprise these soils. Average annual precipitation ranges between 10 and 14 inches. Vegetation is characterized by blue grama, western wheat and sagebrush.

Shawa clay loam, 0 to 3 percent slopes. This soil consists of clay loams with rooting depths over 60 inches. Parent materials of alluvium on playa bottoms comprise this soil. Average annual precipitation in this complex ranges from 10 to 12 inches. Vegetation is characterized by blue grama, western wheat and fourwing saltbush.

Silva loam, 2 to 10 percent slopes. This soil consists of loams, with rooting depths over 60 inches. Parent material formed from mixed alluvium and eolian material comprises this soil. Average annual precipitation in this area ranges from 11 to 13 inches. Vegetation is characterized by western wheat, blue grama, galleta and sagebrush.

Silva-Sedillo association, gently sloping. These soils consist of loams, with rooting depths over 60 inches. Parent material formed from mixed alluvium and eolian material comprises this soil. Average annual precipitation in this area ranges from 11 to 13 inches. Vegetation is characterized by western wheat, blue grama, galleta and fourwing saltbush.

Stunner cobbly loam, 1 to 5 percent slopes. This soil consists of cobbly loams, with rooting depths over 60 inches. Parent material of mixed alluvium and eolian sediment comprises this soil. Average annual precipitation in this area ranges from 10 to 12 inches. Vegetation is characterized by western wheat, blue grama, threeawn and winter fat.

Stunner-Luhon association, gently sloping. These soils consist of loams, with rooting depths over 60 inches. Parent material of mixed alluvium and eolian sediment comprises this soil. Average annual precipitation in this area ranges from 10 to 12 inches. Vegetation is characterized by western wheat, blue grama, threeawn and rabbitbrush.

Stunner-Travelers association, gently sloping. These soils consist of stony loams, with rooting depths between 20 and over 60 inches. Parent material of mixed alluvium, residuum of basalt and eolian sediment comprises this soil. Average annual precipitation in this area ranges from 10 to 12 inches. Vegetation is characterized by western wheat, blue grama, threeawn and winter fat.

Travelers very stony loam, 1 to 8 percent slope. This soil consists of very stony loams, with rooting depths up to 20 inches. Parent material formed of residuum and eolian material on basalt flows comprises this soil. Average annual precipitation in this area ranges from 10 to 12 inches. Vegetation is characterized by western wheat, blue grama, rabbitbrush and winter fat.

The **proposed action** could cause both positive and negative impacts to the soils. Livestock impacts to soils are dependent on management, soil properties and weather. For example, livestock movement over wet soils can result in increased erosion and soil compaction. Proper distribution of livestock minimizes the negative impacts

while still providing the positive impacts, such as loosening of compacted soils and breaking up hydrophobic crusts resulting in increased infiltration. It is important that livestock are managed so that density and diversity of vegetation cover are maintained to limit soil loss.

Under current management, soil indicators for the allotments point to good soil condition (Average = 90%) with the lowest Soil and Site Stability rating being 74% (see the 'Standards for Rangeland Health' portion later in this document for further information and explanations).

Based on current knowledge, the **proposed action** will result in minimal impact or have a positive impact. The **no grazing alternative** would remove livestock from the area and eliminate both the positive and negative impacts of livestock.

Wetlands/Riparian Areas

The allotments identified in this document contain ephemeral channels adjacent to an interstate water. These are identified as Waters of the United States by the U.S. Army Corps of Engineers (USACE). Proposed grazing activities would not have a significant impact on these channels. Any alteration of these channels would require clearance from the Taos Field Office and USACE. The allotments north of highway 64 are within a region known to have playas, which may contain riparian vegetation when wet. On the dates the allotments were visited no riparian vegetation was observed. Thus, **neither alternative** will have any impact. Allotments will continue to be monitored for playas and their associated vegetation.

Allotment 517 is adjacent to the Lower Rio Hondo (rated as Functioning at Risk in 2006) is an ephemeral drainage. Allotment 521 is adjacent to the Ojo Sarco (rated as Non-Functioning in 1994), a typically perennial system with cottonwood, willow, saltcedar and other riparian vegetation. Several allotments (590, 592, 606, 608, and 641) are adjacent to the Upper Rio Grande (rated as Proper Functioning Condition in 1994). Since none of these allotments contain riparian vegetation within their boundaries, and grazing is prohibited in the Rio Grande pursuant to the Final Rio Grande Corridor Plan (2000), **neither alternative** would impact riparian areas.

Lengthy and robust riparian areas are located within allotment 522, including the Rio Truchas (rated as Proper Functioning Condition in 2003), and contain willow, cottonwood, saltcedar, Russian olive and other riparian vegetation. Various springs and seeps are also found throughout this region. A winter-only grazing regime is applied within the Rio Truchas riparian pasture and, therefore, **neither alternative** would negatively impact riparian areas in this allotment.

Water Quality

Subsurface water – Current impairments are not identified and ground water is not likely to be impacted by the proposed cattle.

Surface – These allotments are located in Hydrologic Unit (HUC) 13020101, which comprise 1,980,178 acres along the Upper Rio Grande River and its tributaries and is further divided into smaller HUCs. The allotments analyzed in this document occur in eight of these smaller HUCs (Table 2).

Table 2. Summary of BLM allotments by 10 Digit HUC (subwatershed and NMED evaluation unit).

NMED Assessment Unit	Subwatershed	Allotments	BLM Acreage	Percent of Subwatershed
NM-2219_05	Latir Creek – Rio Grande	576, 588, 590, 592, 606	13,072	7.8%
NM-2219_05	Red River – Rio Grande	581, 588, 606, 608, 641	16,147	11.2%
NM-2119.20	Rio Pueblo de Taos – Rio Grande	617, 618, 619, 620, 624, 626, 767, 929, 942	8,226	4.0%
NM-2111_10	Arroyo Aguaje de la Petaca	581, 599, 767, 929, 942	5,384	3.4%

NM-2111_10	Rio Chama – Rio Grande	503, 514, 517, 522, 626	24,378	13.8%
NM-2111_40 NM-2120.A_401	Embudo Creek	521	1,408	0.7%
NM-2120.A_902	Rio de los Pinos – Rio San Antonio	599	96	0.1%
NM-2119_10	Red River	606, 608	3,486	2.9%

The New Mexico Environment Department surveyed and evaluated perennial reaches in the three mentioned watersheds in 2002 and identified impairments for stream reaches not meeting water quality standards for designated uses. There are multiple Assessment Units in common with the subject allotments as outlined in Table 2. The following impairments are identified for these units:

NM-2119_05, Rio Grande (Red River to CO border) – Includes 29,219 acres of BLM land in allotments 576, 581, 588, 590, 592, 606, 608 and 641. This reach was assessed in 2002 and categorized as 5/5C, not supporting coldwater fishery use. Probable causes were temperature and pH with probable sources including removal of riparian vegetation, recreation and tourism Activities (other than boating), hydromodification and habitat modification. BLM staff notes that impairments occurring in the Rio Grande near these allotments are not due to BLM grazing management. Impairments appear to be due primarily to water management and water delivery from Colorado.

NM-2111_10, Rio Grande (San Juan Pueblo bnd to Rio Pueblo de Taos) – Includes 29,762 acres of BLM land in allotments 503, 514, 517, 522,581, 599, 626, 767, 929 and 942. This reach was assessed in 2002 and categorized as 2, not supporting marginal coldwater and warmwater fishery use. Probable causes were turbidity and stream water deposits with probable sources including removal of riparian vegetation, range grazing, irrigated crop production, grazing related sources, crop related sources, agriculture and habitat modification.

NM-2111_40, Embudo Creek (Rio Grande to Picuris Pueblo bnd) – Includes 1,408 acres of BLM land in allotment521. This reach was assessed in 2002 and categorized as 2, not supporting marginal coldwater and warmwater fishery use. Probable causes were turbidity, aluminum - chronic and stream water deposits with probable sources including removal of vehicle use in arroyos, natural sources, land development, hydromodification, dredging, construction, channelization, bank or shorelind modification/destabilization, agriculture, riparian vegetation, range grazing, grazing related sources, agriculture and habitat modification.

NM-2119_10, Red River (Rio Grande to Placer Creek) – Includes 3,486 acres of BLM land in allotments 606 and 608. This reach was assessed in 2002 and categorized as 2, not supporting irrigation, livestock watering and coldwater fishery use. Probable cause was aluminum – chronic with probable sources including resource ecraction, natural sources, mine tailings, mill tailings, highway maintenance and runoff and abandoned mining.

Based on Rangeland Health Evaluation surveys, there is not likely to be any increased water quality impairments resulting from the **proposed action**. This opinion is based on three factors: BLM land surface in these subwatersheds comprise a low percentage of the total area, ratings for Soil/Site Stability and Hydrologic Function average 90% similarity to ecological site descriptions and most allotments are a substantial distance from the perennial reaches. Thos allotments that are in close proximity to the perennial reaches, livestock are restricted from the riparian areas and waters by either physical barriers or fences. The **no grazing alternative** may or may not remove or ameliorate the impaired reaches.

Floodplains

Surveys occurring during 2007 indicated that flood plains occur only within ephemeral channels or arroyos. There are not mapped by FEMA and their frequency and extent of inundation are difficult to estimate due to a lack of gauge data. However, significant flow can occur resulting in channel scouring. Upslope conditions and hydraulic alteration of these channels can degrade the floodplain resulting in excessive erosion and increased flow rates. Any permittee alteration planned within these channels will require a separate NEPA analysis and permits from other regulatory agencies.

Grazing in compliance with the **proposed action** will have minimal adverse effect on floodplains due to timing and intensity of grazing. The **no grazing alternative** would have no direct negative effect on ephemeral floodplains.

Hazardous or Solid Wastes

There were no hazardous or solid wastes identified on the allotments or will result from the proposed action. There would be no effect under **either alternative**.

Wild and Scenic Rivers

A small portion of allotments 590, 592, 606, 608, 626 and 641 are within the Rio Grande Wild and Scenic River boundary. Also, allotment 606 has a small portion within the Red River Wild and Scenic River boundary. In accordance with the Rio Grande Corridor Plan, no livestock grazing is permitted within the river corridors, consequently there would be no effect in **either alternative.**

Prime or Unique Farmland

There have been no prime or unique farmlands identified within the Taos Field Area, to there would be no effect under **either alternative**.

Vegetation

Vegetation expected for the soils identified in the allotments include: western wheatgrass, Indian ricegrass, blue grama, bottlebrush squirreltail, ring muhly, Galleta, threeawn, needle and thread, prairie junegrass, muttongrass, Arizona fescue, sideoats grama, fringe sage, black sagebrush, groundsel, winter fat, sagebrush, prickly pear, fourwing saltbush, rabbitbrush, snakeweed, yucca, pinyon, juniper, scarlet globemallow, Indian paintbrush, wild buckwheat and other species in smaller amounts.

Grazing can and has impacted vegetation within some of the allotments, especially those with historic sheep grazing. Other impacts to vegetation have been the lack of natural disturbance. The interdisciplinary resource team concluded that most of the allotments are in better ecological condition than in the past and the areas that could still be improved were due to the aforementioned historic grazing, drought or the change in fire regimes. Therefore, under the **proposed action**, short-term impacts to vegetation are expected while long term trends are not the result of current grazing. Under the **no grazing alternative**, there would be no measurable vegetative removal from the allotment.

Noxious Weeds

Any time livestock are grazed in other areas and then returned to the allotment or fed non-certified feed there is a risk of introducing exotic or noxious plant species to the allotment. The **proposed action** would not pose additional risks of introduction or spread of noxious weeds beyond those already occurring. Under both the **proposed action** and **no grazing alternative**, weeds could be introduced by road maintenance equipment or recreational activities.

Under the **proposed action**, weeds could be introduced to the allotment through livestock feces, emergency feed, watering equipment or vehicles associated with the management of livestock. The **no grazing alternative**, would limit the risk of new infestation to those caused by human activities and wildlife.

Cultural Resources

All allotments were visited and Class 2 surveys were completed to identify sites to determine the impacts grazing may have on the sites located. Results are summarized in Table 3.

Table 3. Summary of cultural resource surveys by allotment

Allotment Number	Total Federal Acres	Survey Date	Sites Recorded	Site Type	Adverse Affects
503	168	8/23/2007	1	Prehistoric Pot Drop (FS-503-01)	NONE
514	270	8/22/2007	1	Lithic Scatter (FS-514-01)	NONE
517	1,860	7/26/2007	1	Lithic Scatter (LA 54678)	NONE
521	1,629	8/21/2007	0	N/A	NONE
522	22,738	7/26/2007	0	N/A	NONE
576	480	6/16/2008	0	N/A	NONE
581	3,193	8/7/2007	0	N/A	NONE
588	4,504	8/10/2007	0	N/A	NONE
590	5,422	6/16/2008	0	N/A	NONE
592	5,010	8/6/2007	1	Sheepherder Corral (FS-592-01)	NONE
599	280	8/10/2007	0	N/A	NONE
606	4,724	8/12/2007	3	Lithic Scatters (LA 53691) (LA 53672) (LA 53673)	NONE*
608	2,758	8/13/2007	1	Lithic Scatter (FS-608-01)	NONE
617	640	8/8/2007	0	N/A	NONE
618	1,760	8/8/2007	0	N/A	NONE
619	2,400	7/11/2007	0	N/A	NONE
620	1,284	8/8/2007	0	N/A	NONE
624	320	8/7/2007	0	N/A	NONE
626	1,380	8/8/2007	0	N/A	NONE
641	5,602	7/19/2007	1	Lithic Scatter (LA 87923)	NONE*

767	477	7/11/2007	0	N/A	NONE
929	1,210	8/8/2007	0	N/A	NONE
942	1,560	7/10/2007	4	Lithic Scatters (LA 88500) (LA 88501) (LA 88654) (LA 88655)	NONE*
***** National Register Eligible sites require continued monitoring, but show no adverse affects to grazing at this time.					

Under the **proposed action**, grazing intensity would remain at current levels. Based upon a literature, site and survey files review and the reconnaissance inventory, it is likely that little or no damage would result from grazing. But, continued grazing in these subject allotments could impact cultural resources in two ways. First, grazing could cause some trampling of artifacts and features. Second, natural erosion due to ground disturbance could damage sites. These effects would be slightly less under the **no grazing alternative**. As seen in the Table 3, no impacts to cultural resources were discerned during the surveys of the allotments. Therefore, there would be little or no damage to cultural sites form grazing. The **no grazing alternative**, would have no effect on cultural resources by removing livestock from the allotment.

Native American Religious Concerns

There have been no areas of concern identified within these allotments. As part of the EA process, all tribes within the Field Office boundary will receive the opportunity to provide information on any areas of concern in or near the allotments.

Wildlife

The allotments are located in the Intermountain Basins Big Sagebrush Shrubland, Riparian, and Rocky Mountain Montane Mixed Conifer Forest and Woodland, key wildlife habitat types as identified in the Comprehensive Wildlife Conservation Strategy of the New Mexico Department of Game and Fish (2005). Existing habitat within the allotments include: pinyon-juniper woodlands, open prairie, and sagebrush savannahs and supports seasonal home ranges for elk, mule deer, pronghorn, black bear, mountain lion, coyote, prairie dog, badger, black-tailed jackrabbit, desert cottontail, gopher, mice, bats, raptors, turkey vulture, American kestrel, common nighthawk, broad-tailed hummingbird, Say's phoebe, common raven, horned lark, rock wren, reptiles, amphibians and a variety of insects. The region is an important refuge for many species of wildlife.

Livestock grazing has occurred in this area for decades, with the greatest number of animals and associated disturbance occurring in the late 1800's. The current condition of the habitat is attributed to a long history of improper grazing, that has resulted in some loss of native perennial grasses and an expansion of sagebrush and other shrubs. Historic grazing also reduced the diversity of the forb component. Some sites no longer have a soil seed bank sufficient to produce the native perennial grass component. Non-native vegetation reduces productivity and diversity and, in some cases, altered fire regimes. In these dense stands of sagebrush, even moderate levels of livestock grazing can remove the herbaceous understory, which in turn releases sagebrush seedlings from competition with herbaceous and graminoid plants. This process results in excessively dense sagebrush stands with a sparse understory of annuals and unpalatable perennials (Havstad and Vavra 2004). It is likely that bird and small mammal assemblages have been affected by the change in structure and composition of the vegetative community. Effects of livestock grazing, invasion of noxious plants and a changing fire regime have affected the prey base of top-level predators in the system, such as raptors, carnivores, and rattlesnakes (Jenkins et al. 2004).

Impacts of improper grazing practices on wildlife and habitat include: increased competition for limited water, forage, and space; alteration of vegetative composition and structure; impacts to stream hydrology and water quality; and reduced soil permeability and potential to support plants due to soil compaction. Judicious grazing practices can have positive affects on wildlife and be a beneficial management tool; these include: increases in vegetation composition diversity and improvement of forage availability and quality for early to mid-successional wildlife species; creation of patchy habitat with high structural diversity for feeding, nesting and hiding; opening up areas of dense vegetation to improve foraging areas for a variety of wildlife; removing rank, coarse grass that will encourage regrowth and improve abundance of high quality forage for wild ungulates; stimulating browse production by reducing grass biomass; and improving nutritional quality of browse by stimulating plant regrowth (NMDGF 2005).

The allotments contain critical winter range and a migratory corridor for elk, mule deer and pronghorn. Winter range is considered the most limiting habitat type for elk and mule deer, and includes sagebrush-steppe, pinyon-juniper woodlands, mountain shrub, and ponderosa pine below 7,500 feet. Winter diets for mule deer are a combination of forbs, browse, and new growth on cool-season grasses. Browse becomes an increasing portion of the diet as snow accumulates or forbs and grasses become depleted. In northern New Mexico, mule deer become concentrated on winter ranges with densities of 20-100 deer/square mile in suitable habitat (Watkins and Bishop et al. 2007). Winter ranges are critical because these areas support higher densities of mule deer and elk on less available forage, are less tolerant of high herbivory rates, are prone to non-native weed invasion, and are potential areas for development of energy, minerals or residential subdivisions.

Studies in northern New Mexico have indicated that total elimination of grazing did not improve range condition on upland or lowland sites when compared with adjacent moderately grazed areas (Holecheck and Stephenson 1985). There are examples that suggest many wildlife species are tolerant of moderate grazing and many appear to benefit from light to conservative grazing. Smith et al. (1996) found that lightly grazed climax rangelands and conservatively grazed late seral rangelands had similar songbird and total bird populations. They also concluded that wildlife diversity was higher on the conservatively grazed late seral than the lightly grazed climax rangeland. Studies in southeastern Arizona by Bock et al. (1984) support the hypothesis that conservatively to moderately grazed areas in mid or late seral condition supported greater diversity of wildlife than ungrazed areas in climax condition. Livestock grazing was also shown to enhance forage for elk and manage their distribution by increasing availability and nutritional value of preferred grasses in early growth stages (Holechek et al. 2004).

The current range condition in these allotments is a mid seral successional stage (Harmon, pers. comm. 2008). Best management practices would ensure that forage production within this area can support both wildlife and livestock on a sustained basis. The functionality assessment of habitat components is as outlined in Table 4.

The **proposed action** would not have a notable adverse impact on wildlife. Analyses of resident herbivore diets in northern New Mexico show pronghorn consume primarily forbs and shrubs and very little grass. Cattle primarily eat grasses, while sheep select nearly equal proportions of grasses, forbs and shrubs (Jeffers 1985). Elk graze and browse a variety of plant species depending on the season and forage quality and availability, preferring green grass in the spring, eating more forbs and shrubs in the summer, and often shrubs and conifers in winter. Mule deer forage consists primarily of shrubs and trees in all seasons, with up to 50% being forbs the in the summer and 25% consisting of grasses in the spring (Watkins and Bishop et al. 2007). The **no action alternative** would remove all possible competition between wildlife and livestock.

Table 4. Functionality assessment for Biotic Fauna.

Allot.	Biotic Fauna Rating	Summary		Allot.	Biotic Fauna Rating	Summary
503	Functioning at Risk-Static	Static was given due to the lack of data for a trend		**608**	Proper Functioning Condition	N/A

514	Functioning at Risk-Static Proper Functioning Condition	Static was given due to the lack of data for a trend N/A		**617**	Proper Functioning Condition	N/A
517	Proper Functioning Condition	N/A		**618**	Proper Functioning Condition	N/A
521	Functioning at Risk-Static	Static was given due to the lack of data for a trend		**619**	Functioning at Risk-Downward Trend	Changes in vegetation due to the lack of natural disturbance
522	Proper Functioning Condition	N/A		**620**	Proper Functioning Condition	N/A
576	Proper Functioning Condition	N/A		**624**	Functioning at Risk-Static	Changes in vegetation due to the lack of natural disturbance
581	Proper Functioning Condition	N/A		**626**	Functioning at Risk-Static	Changes in vegetation due to the lack of natural disturbance
588	Proper Functioning Condition	N/A		**641**	Proper Functioning Condition	N/A
590	Proper Functioning Condition	N/A		**767**	Proper Functioning Condition	N/A
592	Proper Functioning Condition	N/A		**929**	Proper Functioning Condition	N/A
599	Proper Functioning Condition	N/A		**942**	Functioning at Risk-Downward Trend Proper Functioning Condition	Changes in vegetation due to the lack of natural disturbance N/A
606	Proper Functioning Condition	N/A				

Threatened or Endangered Species

Federally listed threatened (T) and endangered (E) species in Taos and Rio Arriba counties include: black-footed ferret (*Mustela nigripes*) (E); Southwestern willow flycatcher (*Empidonax traillii extimus*) (E); interior least tern (*Sterna antillarum*) (E); Rio Grande silvery minnow (*Hybognathus amarus*) (E); and Mexican spotted owl (*Strix occidentalis lucida*) (T). It is determined that there are no federally listed threatened or endangered species likely to be found in the subject allotments. There is one state-listed threatened species which may be found in the area, the Bald eagle (*Haliaeetus leucocephalus*), during winter months. There is a sub-species of the Gunnison's prairie dog (montane) (*Cynomys gunnisoni*), listed as a federal Candidate species, located on the allotments. There is no designated critical habitat for any species listed by the U.S. Fish and Wildlife Service (USFWS) within the allotments. It is determined that the **proposed action** or **no grazing alternative** will have no affect on federally listed threatened or endangered species, and minimal to no impact on species that are listed as Proposed or Candidate species by the USFWS, or state-listed threatened or endangered species.

Migratory bird species of conservation concern (BLM Interim Management Guidance 2008-050) that have the potential to occur on the allotments include burrowing owl, ferruginous hawk, prairie falcon, golden eagle, mountain plover, loggerhead shrike, mourning dove, pinyon jay, Brewer's sparrow, and sage sparrow. The **proposed action** has the potential to have a negative affect upon individual birds, eggs, young and/or the nesting habitat of ground nesting birds, such as mountain plover, due to trampling by livestock or the loss of four acres of grass/shrubs from the development of two dirt tanks however, it is unlikely there would be a

notable impact to the population of this or any other species of conservation concern. The **no grazing alternative** could have either a beneficial or detrimental affect on individual migratory bird species of concern, depending on the response of range condition and individual species requirements, but affects at the population or species level would not be adverse.

Species of Greatest Conservation Need (NMDGF 2005) that have the potential to occur on the allotments include: ferruginous hawk, mourning dove, loggerhead shrike, sage thrasher, sage sparrow, bald eagle, golden eagle, olive-sided flycatcher, pinyon jay, yellow warbler, white-tailed jackrabbit, Gunnison's prairie dog, mule deer, tiger salamander, and collared lizard. It is determined that the **proposed action** and **no grazing alternative** will have minimal impacts on Species of Greatest Conservation need.

Social / Economic Issues

BLM permits/leases are transferred to qualified applicants at the request of the current permittee/lessee; the BLM has had no influence on the social makeup of those who currently hold these permits. Therefore, it has been determined that neither the **proposed action** nor the **no grazing alternative** would be likely to result in impacts which would occur disproportionately in low-income groups, minorities or Indian tribes. With regard to economics, the **proposed action** would allow the permittee to continue the lifestyle they have known and earn money from cattle operations on federal lands. Suspension of the grazing permit under the **no grazing alternative** would cause monetary losses to the permittee/lessee, in the form of increased costs to rent additional pasture or in purchasing feed.

Recreation

Allotments 606, 608 and 641 make up a large portion of the Wild Rivers Recreation Area. Grazing has been restricted within the loop road area to eliminate livestock issues in campgrounds and increase aesthetic appeal. Therefore, it is determined that neither the **proposed action** nor the **no grazing alternative** would have measurable impacts on recreation.

Standards for Rangeland Health

Field crews completed the Rangeland Health Evaluation Summary Worksheet for all the subject allotments, with subdivision by parcel or distinct Ecological Site. Results are summarized in Table 5 by Soil/Site Stability, Hydrologic Function and Biotic Integrity and totals by site and indicator group. The percent similar indicator score was created by multiplying an assigned value for departure from site descriptions/reference areas by the number of indicators at the level. Departure scores are categorized as: none to slight = 5, slight to moderate = 4, moderate = 3, moderate to extreme = 2 and extreme = 1, thus giving the most similar sites the highest score.. For example, if all indicators under Soil/Site Stability were rated none to slight (best condition), the equation would be 5(score)*9indicators=45/45*100 = 100% similarity, or what is expected based on an Ecological Site Description.

The Standards are a tool for assessing range condition and are not analyzed under **either alternative** here. If an allotment or pasture falls below 80% in the Soil Site Stability, Hydrologic, or Biotic indicators, monitoring should be established to determine the cause/s of the low rating. The BLM in consultation with the permittee and various other agencies, through an interdisciplinary effort would develop goals and objectives for the areas that are falling below 80% to improve the condition.

Table 5. Summary of indicators by allotment.

Allotment Number	Observers	Survey Date	Percent of Soil/Site Stability	Percent of Hydrologic Function	Percent of Biotic Integrity	Average Percentage
503	Riehn, Young	8/23/2007	82%	76%	71%	76%
514	Riehn, Young	8/22/2007	84% 96%	80% 96%	71% 98%	78% 97%
517	Riehn, Young	8/21/2007	88%	86%	93%	89%
521	Riehn, Young	8/21/2007	86%	82%	82%	84%
522	Riehn, Young	7/26/2007	96% 92%	94% 92%	93% 91%	94% 92%
576	Riehn, Williams, Young	5/23/2008	98%	98%	100%	99%
581	Lopez, Riehn, Young	8/7/2007	100%	100%	98%	99%
588	Lopez, Riehn, Young	8/10/2007	92%	92%	95%	93%
590	Riehn, Young	5/6/2008	94%	92%	93%	93%
592	Lopez, Riehn, Young	8/6/2007	100%	100%	100%	100%
599	Lopez, Riehn, Young	8/10/2007	100%	100%	100%	100%
606	Lopez, Riehn, Young	8/13/2007	86%	86%	93%	88%
608	Lopez, Riehn, Young	8/13/2007	76% 90%	76% 90%	84% 93%	79% 91%
617	Lopez, Riehn, Williams, Young	8/8/2007	98%	96%	95%	96%
618	Lopez, Riehn, Williams, Young	8/8/2007	90%	88%	93%	90%
619	Haromn, Riehn, Young	7/11/2007	78%	76%	68%	74%
620	Lopez, Riehn, Williams, Young	8/8/2007	90%	88%	93%	90%
624	Lopez, Riehn, Young	8/7/2007	74%	68%	62%	68%
626	Lopez, Riehn, Young	8/7/2007	90%	86%	80%	85%
641	Lopez, Riehn, Williams, Young	8/10/2007	90%	88%	93%	90%
767	Dean, Harmon, Riehn, Young	7/11/2007	100%	98%	97%	98%
929	Lopez, Riehn, Williams, Young	8/8/2007	98% 74%	94% 72%	89% 71%	94% 72%
942	Dean, Harmon, Riehn, Young	7/10/2007	100% 84%	100% 80%	100% 71%	100% 78%

Residual Impacts

Residual impacts of livestock grazing would not change under the **proposed action**. There would continue to be moderate removal of current years growth on forage species. This removal may be detectable by visitors to the area but is within the acceptable range. Livestock would be visible on the allotment during their season of use. This can be positive or negative depending on the perspective of each visitor. There would be no measurable impact from the **no grazing alternative**.

Cumulative Impacts

The primary disturbance factor within the region has been historical grazing with subsequent habitat conversion. The area has been affected by habitat fragmentation and conversion due to urban, residential,

commercial, and recreational activities and development. The future effects of these developmental factors may increase as human populations in the area continue to grow.

BLM land comprises roughly 17% of the area within the Upper Rio Grande watershed. (Percentages are relative to lands within the Taos Field Office.) The subject allotments cover roughly 21% of the BLM land in this watershed and 3.5% of the total land mass of this watershed. Due to the relatively low percentages of federal land involved, and with no changes being made to livestock management on these allotments, there would be no significant impact. Livestock grazing is only one of several disturbance activities within the area. Some uses with similar impacts are off-road vehicles, other recreational use and road construction and maintenance. There would be no measurable cumulative impacts from the **proposed action** or the **no grazing alternative**.

Conformance with Plans

The proposed permit renewals within this document are in conformance with the Taos Resource Area Management Plan (1988). Livestock grazing impacts were analyzed on a Resource Area wide basis in the Taos Resource Management Plan. An Allotment Evaluation (AE) document has been prepared for each allotment and is available for review at the Taos Field Office. Individual allotment maps are available at the Taos Field Office and upon request.

Consultation and Coordination

This Environmental Assessment will be mailed to all individuals or organizations who have notified the Taos Field Office of their interest. These individuals or organizations will be given 15 days to make comments on the accuracy of this document.

Preparers

This document was prepared and reviewed by a team from the Taos Field Office. They include:
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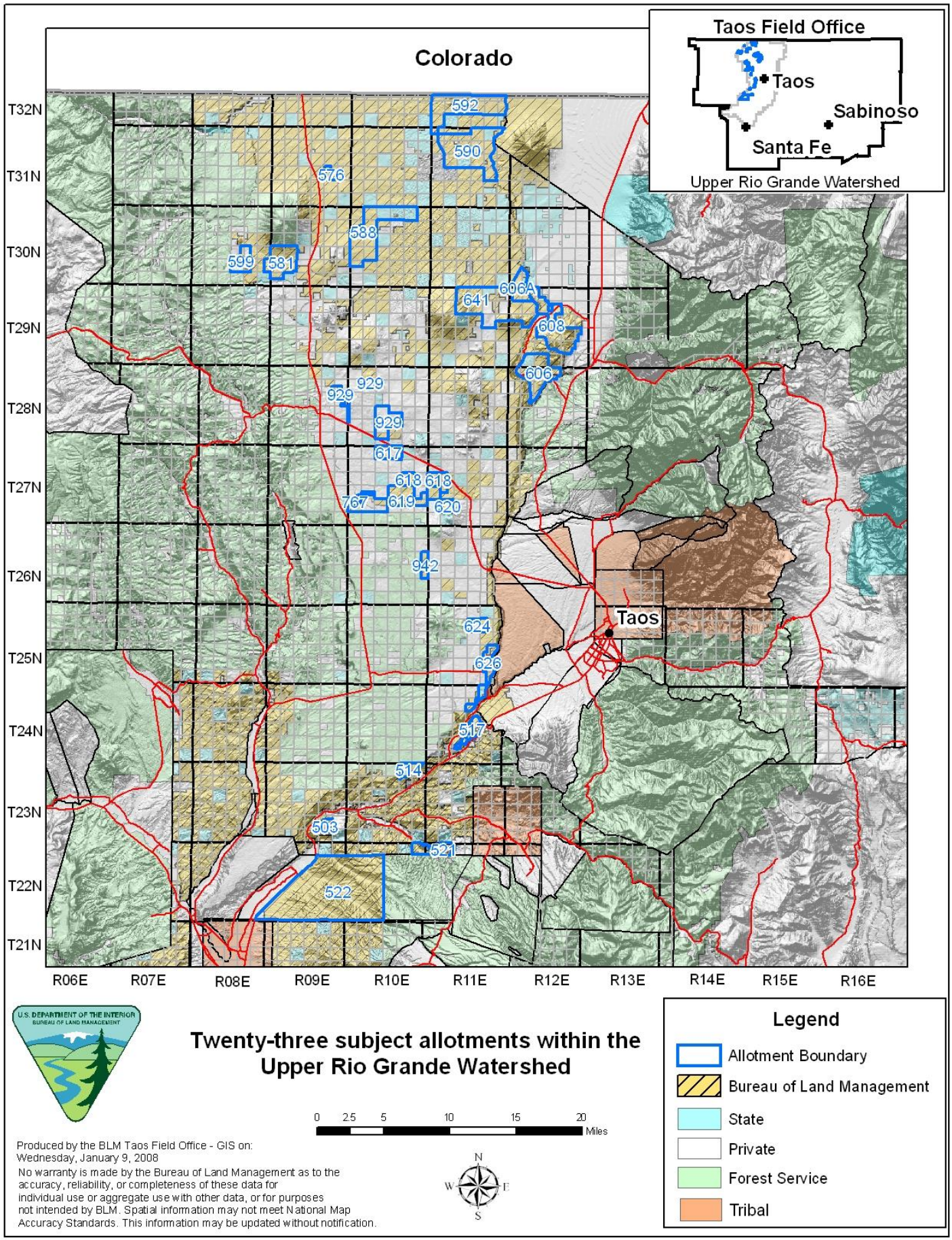

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Twenty-three subject allotments within the Upper Rio Grande Watershed

0 2.5 5 10 15 20 Miles

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Legend

- Allotment Boundary
- Bureau of Land Management
- State
- Private
- Forest Service
- Tribal

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